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ABSTRACT

The present invention relates to a method for inhibiting the adhesion of one cell to another comprising interfering with the interaction between the extracellular matrix receptor and its ligand.

The invention is based upon the discovery that the $\alpha 4\beta 1$ extracellular matrix receptor promotes adhesion of lymphocytes to endothelial cells via attachment to a defined peptide sequence. Prior to the present invention, the ligand of the $\alpha 4\beta 1$ receptor had not been identified, nor had the function of the $\alpha 4\beta 1$ receptor in lymphocyte attachment been known. By preventing the interaction between the $\alpha 4\beta 1$ receptor and its ligands using antibodies or defined peptide sequences, the present invention enables, for the first time, specific intervention in the migration of lymphocytes through the vascular endothelium and into tissues. The present invention, therefore, has particular clinical utility in suppression of the immune response; in various specific embodiments of the invention, the adherence of lymphocytes to endothelium may be inhibited systemically, or may, alternatively, be localized to particular tissues or circumscribed areas. Accordingly, the present invention provides for treatment of diseases involving autoimmune responses as well as other chronic or relapsing activations of the immune system, including allergy, asthma, and chronic inflammatory skin conditions.